BROCADE ICX 6610 SWITCH

ENTERPRISE LAN SWITCHING

Chassis-Like Capabilities in a Stackable Form Factor

HIGHLIGHTS

- Delivers chassis-level performance and availability, providing an optimal user experience for streaming video, VDI, UC, and other critical applications
- Offers unprecedented stacking performance with 320 Gbps of stacking bandwidth, eliminating inter-switch bottlenecks
- Provides up to 1 Tbps of total switching capacity with up to 384 1 GbE and 64 10 GbE per stack for campus network edge and aggregation layers
- Provides unmatched availability with four redundant 40 Gbps stacking ports per switch, hitless stacking failover, hot switch replacement, and dual hot-swappable power supplies and fans
- Simplifies network operations and protects investments with Brocade HyperEdge™ technology*, enabling single-point network lifecycle management and advanced services sharing across a heterogeneous stack

The Brocade One™ strategy helps simplify networking infrastructures through innovative technologies and solutions. The Brocade ICX 6610 Switch supports this strategy by enabling non-stop network access to today's mission-critical applications with the best price/performance while ensuring scalability for tomorrow's needs.

Today's enterprise campus networks are expected to deliver services thought impossible just a few years ago. High-Definition (HD) video conferencing, real-time collaboration, Unified Communications (UC), and Virtual Desktop Infrastructure (VDI) are only a few of the applications that organizations are deploying to enhance employee productivity, improve customer service, and create a competitive advantage. These same networks must also provide anytime, anywhere mobile access and scale to meet rising user expectations. At the same time, organizations face continued pressure to reduce costs and do more with less. More than ever, campus networks need to quickly and efficiently evolve with the ever-changing business environment.

COMBINING THE BEST OF A CHASSIS AND A STACKABLE SWITCH

The Brocade® ICX™ 6610 Switch redefines the economics of enterprise networking by providing unprecedented levels of performance, availability, and flexibility in a stackable form factor—delivering the capabilities of a chassis with the flexibility and cost-effectiveness of a stackable switch.

Class-Leading Performance for Today and Tomorrow

The Brocade ICX 6610 delivers wire-speed, non-blocking performance across all ports to support latency-sensitive applications such as real-time voice and video streaming and VDI. Brocade ICX 6610 Switches can be stacked using four full-duplex 40 Gbps stacking ports that provide an

*Brocade HyperEdge technology is planned to be available for purchase in the first half of 2013.

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unprecedented 320 Gbps of backplane stacking bandwidth with full redundancy, eliminating inter-switch bottlenecks. Additionally, each switch can provide up to eight 10 Gigabit Ethernet (GbE) ports for high-speed connectivity to the aggregation or core layers.

High Availability

When every second matters, Brocade ICX 6610 Switches help deliver continuous availability to optimize the user experience. Brocade stacking technology delivers high availability, performing real-time state synchronization across the stack and enabling instantaneous hitless failover to a standby controller in the unlikely event of a failure of the master stack controller. Organizations also can use hot-insertion/removal of stack members to avoid interrupting service when adding a switch to increase the capacity of a stack or replacing a switch that needs servicing.

In addition to stack-level high availability, Brocade ICX 6610 Switches include system-level high-availability features, such as dual hot-swappable, load-sharing, and redundant power supplies. The modular design also has dual hot-swappable fan trays. These features provide another level of availability for the campus wiring closet in a compact form factor. Additional design features include intake and exhaust temperature sensors and fan spin detection to quickly identify abnormal or failed operating conditions—helping to minimize mean time to repair.

Figure 1.

Brocade ICX 6610 Switches can be stacked using four standard 40 Gbps QSFP ports that provide a fully redundant virtual chassis backplane with 320 Gbps of stacking bandwidth.

Unmatched Simplicity and Investment Protection

The Brocade ICX 6610 is easy to deploy, manage, and integrate into both new and existing networks. Organizations can buy only what they need today and easily scale up as demand grows and new technologies emerge.

The flexibility of a stackable switch allows organizations to forgo investing in a chassis upfront and put precious capital to better use elsewhere. Organizations can purchase an initial switch to get started and add a new Brocade ICX 6610 Switch to the stack as their business grows.

With capabilities such as bandwidth on demand, the Brocade ICX 6610 enables organizations to grow their networks when necessary. Organizations can initially deploy 1 GbE uplink ports and upgrade to 10 GbE ports when desired with an easy-to-activate software license.

Organizations also have peace of mind with the Brocade Assurance® Limited Lifetime Warranty, which continues for the life of the product and includes power supplies and fans. This warranty helps improve Total Cost of Ownership (TCO) while freeing up both capital and resources to re-invest into the business.

The Brocade ICX 6610 uses standard 40 GbE ports and QSFP cables for stacking. This not only delivers class-leading stacking performance and availability, but also increases cabling options and reduces cable costs—unlike competitive offerings, which rely on proprietary stacking ports and cables.

Hardware support for the new MACsec, Energy Efficient Ethernet (EEE), and 40 GbE standards provides maximum future-proofing and investment protection, enabling organizations to deploy these capabilities as needed when more network devices supporting them become available.

BUILT FOR THE MOST DEMANDING CAMPUS NETWORK ENVIRONMENTS

Brocade stacking technology makes it possible to stack up to eight Brocade ICX 6610 Switches into a single logical chassis switch, providing simple and robust expandability for future growth at the network edge or aggregation layer. Also, this stacked virtual switch has only a single IP address to simplify management, and offers transparent forwarding across a pool of up to 384 1 GbE and 64 10 GbE ports. When new switches are added to the stack, they automatically inherit the stack's existing configuration file, enabling true plug-and-play network expansion.

Brocade stacking technology also delivers high availability, performing real-time state synchronization across the stack and enabling instantaneous hitless failover to a standby controller, if the master stack controller fails. In addition, organizations can use hot-insertion/removal of stack members to avoid interrupting service.

Brocade ICX 6610 Switches offer four dedicated full-duplex 40 Gbps stacking ports that provide full redundancy and an unprecedented 320 Gbps of stacking bandwidth, essentially eliminating the need to work around inter-switch bottlenecks (see Figure 1).

Unlike competitive offerings that use proprietary stacking ports, the use of standard 40 Gbps QSFP ports offers optimum flexibility and future-proofing. These dedicated stacking ports free up the 10 GbE ports for high-speed connectivity to the aggregation or core layers.

Up to Eight 10 GbE Ports on Demand per Switch

Brocade ICX 6610 Switches offer eight dual-mode Small Form-Factor Pluggable (SFP)/SFP+ ports, enabling high-bandwidth connectivity to the aggregation or core layers. These ports can be upgraded from 1 GbE to 10 GbE by simply applying a software license, eliminating the need to install a hardware module. In addition, organizations can aggregate these ports across the stack to provide high-speed, redundant links between the wiring closet and the aggregation layer, or between the aggregation and the core layer. With the ability to use short-range and long-range optics, along with copper Twinax cables, the Brocade ICX 6610 supports flexible and cost-effective network architectures (see Figure 2).

The Brocade ICX 6610 delivers industry-leading 8-port 10 GbE density in a 1U

Figure 2.

Brocade ICX 6610 Switches support eight dual-mode 1 GbE/10 GbE SFP/SFP+ ports (left) and up to 48 1 GbE RJ-45 or 24 1 GbE SFP ports (right).

switch, providing up to 80 Gbps of uplink bandwidth to the aggregation or core layers of the network. This bandwidth enables a 1:1 subscription ratio throughout the network. As a result, organizations can deploy highly utilized networks to avoid congestion during peak hours.

Built to Power Next-Generation Edge Devices

The Brocade ICX 6610 can deliver both power and data across network connections, providing a single-cable solution for the latest edge devices. Brocade ICX 6610 Switches are compatible with industry-standard VoIP equipment as well as legacy IP phones. In addition, they support the Power over Ethernet (PoE+) standard (802.3at) to provide up to 30 watts of power to each device. This high-powered solution simplifies wiring for next-generation edge devices, such as video conferencing and Voice over IP (VoIP) phones, pan/tilt surveillance cameras, and 802.11n wireless Access Points (APs). The PoE capability reduces the number of power receptacles and power adapters while increasing reliability and wiring flexibility. With a 1500-watt power budget per switch (with two power supplies), the Brocade ICX 6610 24- and 48-port PoE models can supply up to Class 4 PoE+ (30 watts) power to every port.

Plug-and-Play Operations for Powered Devices

The Brocade ICX 6610 supports the IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and ANSI TIA 1057 Link Layer Discovery Protocol-Media Endpoint Discovery (LLDP-MED) standards that enable organizations to deploy interoperable multivendor solutions for UC. Configuring IP endpoints such as VoIP phones can be a complex task, requiring manual and time-consuming configuration. LLDP and LLDP-MED address this challenge by providing a standard, open method for configuring, discovering, and managing network infrastructure. The LLDP protocols also help reduce operational costs by simplifying and automating network operations. For example, LLDP-MED provides an open protocol for configuring Quality of Service (QoS), security policies, Virtual LAN (VLAN) assignments, PoE power levels, and service priorities.

Flexible Cooling Options

All Brocade ICX 6610 Switches support reversible front-to-back airflow options. This design improves mounting flexibility in racks, while adhering to the cooling guidelines of the hosting environment. Organizations can specify airflow direction at the time of order and can reverse the direction after deployment by swapping the power supplies and fan assembly (see Figure 3).

Figure 3.

The Brocade ICX 6610 provides four 40 Gbps high-performance QSFP stacking ports (center) and dual, hot-swappable load-sharing power supplies and fan trays (left and right).

BROCADE HYPEREDGE TECHNOLOGY

Brocade HyperEdge technology helps IT organizations automate network lifecycle management and share services across premium and entry-level switches, enabling them to reduce complexity and costs while protecting their investments. HyperEdge technology is planned to be available for purchase as a software license for the Brocade FCX Series and the Brocade ICX product family.

Highlights of HyperEdge technology include:

- **Single-point network lifecycle management for the entire campus edge:** IT organizations can manage multiple stacks of switches as a whole, from a single IP address. They can automatically push policies, firmware upgrades, and configuration changes across the entire campus once, from a single point of management. Automating these processes helps reduce management time and costs while helping to eliminate human error in compliance enforcement. It also enables real-time scaling, since switches can be added to the campus without manual configuration.
- **Shared services across heterogeneous stacks:** Intelligent stacking allows mixing and matching of different classes of switches within a single stack, propagating the advanced features and services of premium switches to all of the switches in the stack. This helps save significant IT budget dollars by allowing IT organizations to purchase only what they need today and add intelligent services as the business evolves. It also assures unmatched investment protection since Brocade switch stacks last longer, and premium switches can be added to upgrade stack features across all stack ports.

Full Layer 3 Capabilities

Brocade ICX 6610 Switches also offer powerful IPv4 and IPv6 Layer 3 switching capabilities. Organizations can use premium Layer 3 features—such as IPv4/IPv6 OSPF and RIP routing, Policy-Based Routing (PBR), VRRP, and Protocol-Independent Multicast (PIM)—to reduce complexity and enhance the reliability of large enterprise networks by bringing Layer 3 capabilities to the network edge and/or aggregation layer. Advanced Layer 3 capabilities include BGP routing, enabling remote offices to connect Brocade ICX 6610 Switches to service provider networks. Premium and advanced routing capabilities can be added to any Brocade ICX 6610 Switch model through software key-based activation.

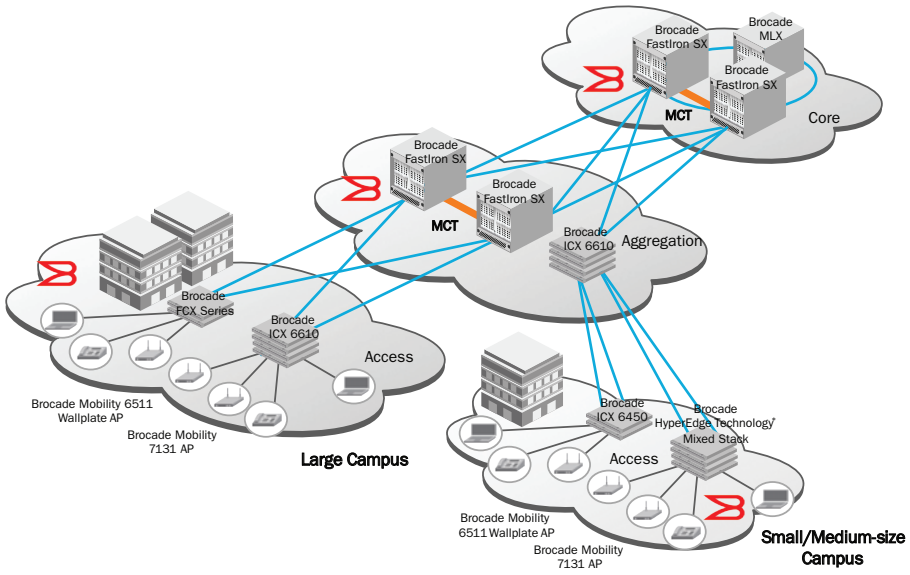

Figure 4.

The Brocade ICX 6610 is suitable for deployment at the network access and aggregation layers, thanks to its high performance, availability, and flexibility.

SIMPLIFIED, SECURE STANDARDS-BASED MANAGEMENT AND MONITORING

The Brocade ICX 6610 provides simplified, standards-based management capabilities that help organizations reduce administrative time and effort while securing their networks.

sFlow-based "Always-On" Network Monitoring

sFlow is a modern, standards-based network export protocol (RFC 3176) that addresses many of the challenges that network managers face today. By embedding sFlow into the Brocade ICX 6610, Brocade delivers an "always-on" technology that operates with wire-speed performance. sFlow dramatically reduces implementation costs compared to traditional network monitoring solutions that rely on mirrored ports, probes, and line-tap technologies. Moreover, sFlow gives organizations full, enterprise-wide monitoring capability for every port in the network.

Simplified Deployment with Auto-Configuration

The Brocade ICX 6610 supports auto-configuration, simplifying deployment with a truly plug-and-play experience. Organizations can use this feature to automate IP address and feature configuration of the switches without requiring a highly trained network engineer onsite. When the switches power up, they automatically receive an IP address and configuration from DHCP and Trivial File Transport Protocol (TFTP) servers. At this time, the switches can also automatically receive a software update to be at the same code revision as currently installed switches.

Open-Standards Management

The Brocade ICX 6610 includes an industry-standard Command Line Interface (CLI) and supports Secure Shell (SSHv2), Secure Copy (SCP), and SNMPv3 to restrict and encrypt management communications to the system. In addition, support for Terminal Access Controller Access Control System (TACACS/TACACS+) and RADIUS authentication helps ensure secure operator access.

Out-of-Band Management

The Brocade ICX 6610 includes a 10/100/1000 Mbps RJ-45 Ethernet port dedicated to out-of-band management, providing a remote path to manage the switches, regardless of the status or configuration of the data ports.

WARRANTY

The Brocade ICX 6610 Switch is covered by the Brocade Assurance Limited Lifetime Warranty. For details, visit www.brocade.com/warranty.

MAXIMUM OPERATIONAL-EFFICIENCY AND INVESTMENT PROTECTION

To further improve operational efficiency, Brocade ICX 6610 Switches come with 90 days of free technical support from the Brocade Technical Assistance Center and free software updates. With these capabilities, organizations gain peace of mind while freeing up IT budget and resources to grow their businesses.

BROCADE GLOBAL SERVICES

Brocade Global Services has the expertise to help organizations build scalable, efficient cloud infrastructures. Leveraging 15 years of expertise in storage, networking, and virtualization, Brocade Global Services delivers world-class professional services, technical support, network monitoring services, and education, enabling

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organizations to maximize their Brocade investments, accelerate new technology deployments, and optimize the performance of networking infrastructures.

CLOUD-OPTIMIZED NETWORK ACQUISITION

Brocade helps organizations easily address their information technology requirements by offering flexible network acquisition and support alternatives to meet their financial needs. Organizations can select from purchase, lease, and Brocade Network Subscription options to align network acquisition with their unique capital requirements and risk profiles.

MAXIMIZING INVESTMENTS

To help optimize technology investments, Brocade and its partners offer complete solutions that include professional services, technical support, and education. For more information, contact a Brocade sales partner or visit www.brocade.com.

BROCADE ICX 6610 FEATURE/MODEL COMPARISON

	24 or 48 RJ-45 Ports		24 SFP Ports	24 or 48 PoE+ Ports	
	Brocade ICX 6610-24	**Brocade ICX 6610-48**	**Brocade ICX 6610-24F**	**Brocade ICX 6610-24P**	**Brocade ICX 6610-48P**
Switching capacity (data rate, full duplex)	528 Gbps	576 Gbps	528 Gbps	528 Gbps	576 Gbps
Forwarding capacity (data rate, full duplex)	396 Mpps (wire speed)	432 Mpps (wire speed)	396 Mpps (wire speed)	396 Mpps (wire speed)	432 Mpps (wire speed)
Stacking bandwidth (data rate, full duplex)	320 Gbps	320 Gbps	320 Gbps	320 Gbps	320 Gbps
10/100/1000 Mbps RJ-45 ports	24	48	N/A	24	48
100/1000 Mbps SFP ports	N/A	N/A	24	N/A	N/A
Dual-mode 1/10 GbE SFP/SFP+ ports (10 GbE SFP+ optional upgrade license)	8	8	8	8	8
40 Gbps QSFP stacking ports	4	4	4	4	4
PoE power budget (two power supplies)	N/A	N/A	N/A	1500 W	1500 W
Maximum PoE Class 3 ports	N/A	N/A	N/A	24 (one power supply)	48 (one power supply)
Maximum PoE+ ports	N/A	N/A	N/A	24 (one power supply)	48 (two power supplies)
Redundant/load sharing; hot-swappable power supplies Max output (second optional)	2×250 W	2×250 W	2×250 W	2×1000 W	2×1000 W
Weight (one power supply/one fan tray)	6.42 kg (14.15 lb)	6.78 kg (14.95 lb)	6.69 kg (14.75 lb)	7.10 kg (15.65 lb)	7.46 kg (16.45 lb)
Dimensions	429 mm (16.880 in.) W × 406.4 mm (16.00 in.) D × 44 mm (1.732 in.) H - 1RU				
Airflow	Front to back (reversible)				

Options	
Second power supply (PoE models)	RPS16 (1000 W)
Second power supply (non-PoE models)	RPS15 (250 W)
Second fan tray	ICX6610-FAN
1 meter QSFP stacking cable	40G-QSFP-C-0101
5 meter QSFP stacking cable	40G-QSFP-C-0501
4×10 GbE ports upgrade license	ICX6610-10G-LIC-POD
Premium Layer 3 license	ICX6610-PREM-LIC
Advanced Layer 3 license	ICX6610-ADV-LIC
Upgrade from Premium to Advanced	ICX6610-ADV-UPG-LIC

BROCADE ICX 6610 SPECIFICATIONS

System Architecture	
Connector options	• 10/100/1000 ports: RJ-45 • 1 Gbps SFP ports: SX, LX, LHA, LHB, 1000Base-BX, CWDM • 10 Gbps SFP+ ports: Direct-attached copper (Twinax), SR, LR • Stacking ports: 40 GbE QSFP for use with direct-attached 1 meter or 5 meter stacking cable • Out-of-band Ethernet management: 10/100/1000 Mbps RJ-45 • Console management: RJ-45 serial
Maximum MAC addresses	32,000
Maximum VLANs	4096
Maximum STP (spanning trees)	254
Maximum routes (in hardware)	16,000
Trunking	Maximum ports per trunk: 8 Maximum trunk groups: 124
Maximum jumbo frame size	9000 bytes
Layer 2 switching	• 802.1s Multiple Spanning Tree • 802.1x Authentication • Auto MDI/MDIX • BPDU Guard, Root Guard • Dual-Mode VLANs • Dynamic VLAN Assignment • Dynamic Voice VLAN Assignment • Fast Port Span • GARP VLAN Registration Protocol • IGMP Snooping (v1/v2/v3) • Link Fault Signaling (LFS) • MAC Address Locking; Port Security • MAC-Layer Filtering • MAC Learning Disable • MLD Snooping (v1/v2) • Multi-device Authentication • Per-VLAN Spanning Tree (PVST/PVST+/PVRST) • Port-based Access Control Lists • Mirroring - Port-based, ACL-based, MAC Filter-based, and VLAN-based • Port Loop Detection • Private VLAN • Protected Link Groups • Protocol VLAN (802.1v), Subnet VLAN • Remote Fault Notification (RFN) • Single-instance Spanning Tree • Single-link LACP • Trunk Groups • Uni-Directional Link Detection (UDLD)
Base Layer 3 routing	• IPv4 and IPv6 static routes • Host routes • Virtual Interfaces • Routed Interfaces • Route-only Support • Routing Between Directly Connected Subnets
Premium Layer 3 routing	• ECMP • L3/L4 ACLs RIP v1/v2 announce • OSPF v2, OSPF v3 (IPv6) • PIM-SM, PIM-SSM, PIM-DM, PIM passive (IPv4 multicast routing functionality) • PBR • RIP v1/v2, RIPng (IPv6) • Virtual Route Redundancy Protocol (VRRP) • VRRP-E, VRRP-E (IPv6) • VRRPv3 (IPv6)
Advanced Layer 3 routing	• BGP
Metro features	• Metro-Ring Protocol (v1, v2) • Virtual Switch Redundancy Protocol (VSRP) • VLAN Stacking (Q-in-Q) • VRRP • Topology Groups
Quality of Service (QoS)	• ACL Mapping and Marking of ToS/DSCP • ACL Mapping and Marking of 802.1p • ACL Mapping to Priority Queue • ACL Mapping to ToS/DSCP • Classifying and Limiting Flows Based on TCP Flags • DHCP Relay • DiffServ Support • Honoring DSCP and 802.1p • MAC Address Mapping to Priority Queue • Priority Queue Management using Weighted Round Robin (WRR), Strict Priority (SP), and a combination of WRR and SP

IEEE standards compliance	• 802.1AB LLDP/LLDP-MED • 802.1D-2004 MAC Bridging • 802.1p Mapping to Priority Queue • 802.1s Multiple Spanning Tree • 802.1w Rapid Spanning Tree • 802.1x Port-based Network Access Control • 802.3 10 Base-T • 802.3ab 1000 Base-T • 802.3ad Link Aggregation (Dynamic and Static) • 802.3ae 10 Gigabit Ethernet • 802.3af Power over Ethernet • 802.3at Power over Ethernet • 802.3u 100 Base-TX • 802.3x Flow Control • 802.3z 1000Base-SX/LX • 802.3 MAU MIB (RFC 2239) • 802.3ba 40 Gbps Ethernet • 802.1AE- MACsec (HW Capable) • 802.3az-2010 - EEE (HW Capable) • 802.1Q VLAN Tagging
Traffic management	• ACL-based inbound rate limiting and traffic policies • Broadcast, multicast, and unknown unicast rate limiting • Inbound rate limiting per port • Outbound rate limiting per port and per queue
High availability	• Redundant hot-swappable internal power supplies • Hot-swappable fan trays • L3 VRRP protocol redundancy • Real-time state synchronization across the stack • Hitless failover from master to standby stack controller • Protected link groups • Hot insertion and removal of stacked units

Management	
Management and control	• Auto Configuration • Brocade HyperEdge technology • Configuration Logging • Digital Optical Monitoring • Display Log Messages on Multiple Terminals • Embedded Web Management • Embedded DHCP Server • Industry-standard Command Line Interface (CLI) • Key-based activation of optional software features • Integration with HP OpenView for Sun Solaris, HP-UX, IBM AIX, and Windows • Brocade Network Advisor support • MIB Support for MRP, Port Security, MAC Authentication, and MAC-based VLANs • Out-of-band Ethernet Management • RFC 783 TFTP • RFC 854 TELNET Client and Server • RFC 1157 SNMPv1/v2c • RFC 1213 MIB-II • RFC 1493 Bridge MIB • RFC 1516 Repeater MIB • RFC 1573 SNMP MIB II • RFC 1643 Ethernet Interface MIB • RFC 1643 Ethernet MIB • RFC 1724 RIP v1/v2 MIB • RFC 1757 RMON MIB • RFC 2068 Embedded HTTP • RFC 2131 DHCP Server and DHCP Relay • RFC 2570 SNMPv3 Intro to Framework • RFC 2571 Architecture for Describing SNMP Framework • RFC 2572 SNMP Message Processing and Dispatching • RFC 2573 SNMPv3 Applications • RFC 2574 SNMPv3 User-based Security Model • RFC 2575 SNMP View-based Access Control Model SNMP • RFC 2818 Embedded HTTPS • RFC 3176 sFlow • SNTP Simple Network Time Protocol • Support for Multiple Syslog Servers

Embedded security	• 802.1X Accounting • MAC Authentication • Bi-level Access Mode (Standard and EXEC Level) • EAP pass-through support • IEEE 802.1X username export in sFlow • Protection against Denial of Service (DoS) attacks
Secure management	• Authentication, Authorization, and Accounting (AAA) • Advanced Encryption Standard (AES) with SSHv2 • RADIUS/TACACS/TACACS+ • Secure Copy (SCP) • Secure Shell (SSHv2) • Username/Password • Web authentication

Environment

Temperature	• Operating temperature: 0°C to 40°C 32°F to 104°F • Storage temperature: –25°C to 70°C 13°F to 158°F
Humidity	• Relative humidity: 5% to 95%, non-condensing
Altitude	• Storage altitude: 10,000 ft (3000 m) maximum
Acoustic	• From 39.6 dB (24 ports, 1 fan, 1 PSU) to 48.7 dB (48 ports, 2 fans, 2 PSUs)

Power

Power supplies	• Up to two internal, redundant, field-replaceable, load-sharing AC power supplies with dedicated system and PoE power
Power inlet	• C13
Input voltage	• Typical 100 to 240 VAC
Input line frequency	• 50 to 60 Hz

Power draw (No PoE loads)	Brocade ICX Model	With 1 power supply	With 2 power supplies
	6610-24	120 W	140 W
	6610-48	165 W	185 W
	6610-24F	125 W	145 W
	6610-24P	120 W	140 W
	6610-48P	165 W	185 W

Compliance/Certification

Electromagnetic emissions	• FCC Class A (Part 15); EN 55022/ CISPR-22 Class A; VCCI Class A; ICES-003 Electromagnetic Emission; AS/NZS 55022; EN 61000-3-2 Power Line Harmonics; EN 61000-3-3 Voltage Fluctuation and Flicker; EN 61000-6-3 Emission Standard (supersedes: EN 50081-1)
Safety	• CAN/CSA-C22.2 NO. 60950-1-07; UL 60950-1 Second Edition; IEC 60950-1 Second Edition; EN 60950-1:2006 Safety of Information Technology Equipment; EN 60825-1 Safety of Laser Products—Part 1: Equipment Classification, Requirements and User's Guide; EN 60825-2 Safety of Laser Products—Part 2: Safety of Optical Fibre Communication Systems
Immunity	• EN 61000-6-1 Generic Immunity and Susceptibility (supersedes EN 50082-1); EN 55024 Immunity Characteristics (supersedes EN 61000-4-2 ESD); EN 61000-4-3 Radiated, Radio Frequency, Electromagnetic Field; EN 61000-4-4 Electrical Fast Transient; EN 61000-4-5 Surge; EN 61000-4-6 Conducted Disturbances Induced by Radio-Frequency Fields; EN 61000-4-8 Power Frequency Magnetic Field; EN 61000-4-11 Voltage Dips and Sags
Environmental regulatory compliance	• RoHS-compliant (6 of 6); WEEE-compliant

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